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Dual-mirror prototype demonstrated at Kirtland

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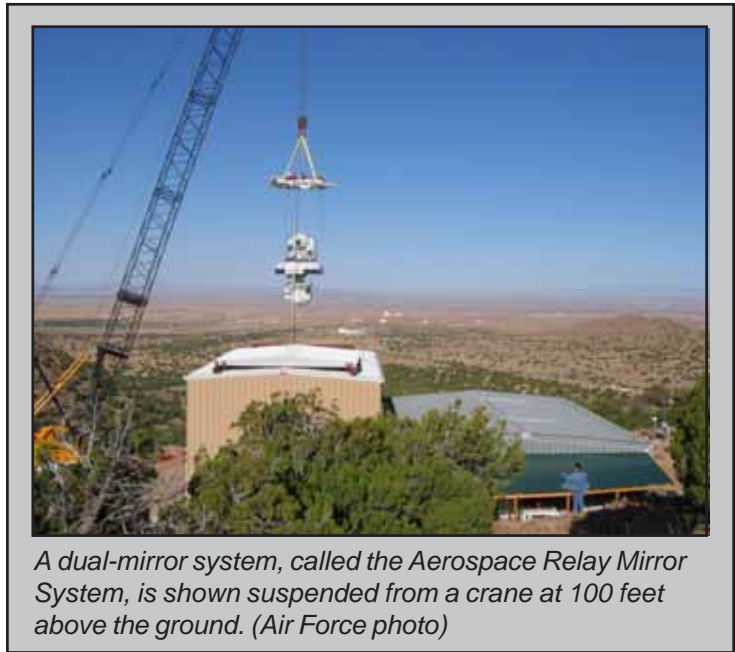
KIRTLAND AIR FORCE BASE, N.M. — A dual-mirror system, designed to extend the range of high-energy lasers by receiving and redirecting laser energy, is being tested at Kirtland Air Force Base.

The system is a prototype called the Aerospace Relay Mirror System (ARMS), developed at the Air Force Research Laboratory's Directed Energy Directorate. The operational version might be suspended from a high-altitude airship at an altitude of 70,000 feet, where atmospheric turbulence, or jitter, is less of a problem for beam quality.

For testing, the dual-mirror prototype is suspended 100 feet above the ground using a mechanical crane, to simulate an airship platform. A low-power ground laser is fired at one of the two 75-centimeter (29.5-inch) mirrors from several miles away. The second mirror relays the non-lethal beam to a ground-based target board about two miles away from the system.

"This demonstration is a major step in the development of relay technology because it shows that a relay mirror system can receive laser energy and redirect it to a target, extending the laser's range," said Pat Shanahan, vice president and general manager of Boeing Missile Defense Systems.

The concept for the system was developed based on research conducted by AFRL in the 1980s. Boeing became involved in the system's progress four years ago under a \$20 million Air Force contract. As the system has progressed, the Air Force plans to use the ARMS hardware to establish a permanent test bed for relay system technology development. @



A dual-mirror system, called the Aerospace Relay Mirror System, is shown suspended from a crane at 100 feet above the ground. (Air Force photo)

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